

MACHINE DESIGN

1957 ANNUAL INDEX

Volume 29—January to December

Author Index

A

- Alban, C. F. and C. C. Perry—"Thermostatic Bimetal Elements," Feb. 21, p. 119
 Alger, John R. M.—"Using Digital Computers," Dec. 12, p. 128
 Anderson, B. R.—"Experimental Stress Analysis," Nov. 14, p. 174
 Anderson, R. G.—"High-Speed Rotating Parts," Oct. 17, p. 148

B

- Bachelor, A. T.—"Adjustable-Speed Drives," Nov. 14, p. 178
 Baldwin, George F. and H. L. Tholstrup—"Data Storage Media," Apr. 18, p. 176
 Barish, Thomas—"Idler Gears," Nov. 28, p. 121
 Barov, M.—"Government Specifications," Feb. 7, p. 76
 Barrett, Richard S.—"Human Engineering," Jan. 24, p. 76
 Beaman, Bernard—"Metering Valve Characteristics," Jan. 10, p. 127
 Beckim, R. W. and H. H. Muller—"Chemical Milling," June 13, p. 153
 Bedingfield, D. L.—"Power-Dividing Transmissions," July 25, p. 83
 Bennett, D. G., H. G. Lefort, and R. M. Spriggs—"Ceramic Structural Adhesives," Oct. 31, p. 114
 Bergen, Jay H.—"Simplified Drafting in Action," Feb. 21, p. 104
 Bilalasis, Viktoras—"Modified-Trapezoid Cam Profiles," Aug. 22, p. 135
 Black, J. M. and R. F. Blomquist—"Tape Adhesives," Oct. 31, p. 113
 Blomquist, R. F. and J. M. Black—"Tape Adhesives," Oct. 31, p. 113
 Blye, Harold—"Galvanic Corrosion," Jan. 10, p. 139
 Boehm, Paul F.—"Three-Dimensional Drafting," June 27, p. 116
 Bolle, Victor W.—"Corner Angles," Mar. 21, p. 165
 Booser, E. R. and E. G. Jackson—"Bearings," May 2, p. 114
 Bowers, Victor S.—"Thermoplastic Materials," June 27, p. 112
 Briggs, J. Z. and R. R. Freeman—"Molybdenum Alloys," Feb. 21, p. 137
 Brozen, Franz R. and John F. Wallace
 "Gray Iron
 Part 1," Dec. 12, p. 154
 Part 2," Dec. 26, p. 85

- Bryant, J. M.—"Bearing Seals," Apr. 4, p. 127
 Buckingham, Earle—"Gear Drive Design," July 25, p. 110
 Buehler, W. J. and J. E. Nachman—"Thermonol Alloys," Oct. 3, p. 138
 Bull, W. I.—"Electronic Component Design," July 25, p. 114
 Burdick, W. E.—"Locating Center of Gravity," Jan. 10, p. 123

C

- Cameron, G. W. and J. W. Rupp—"Evaluating Design Changes," Oct. 3, p. 139
 Carr, Alex B.—"Endurance Limits," May 30, p. 93
 Cedarborg, Gibson A.—"Engineering Writing," Mar. 7, p. 80
 Chicurel, Ricardo—"Moments of Inertia," May 16, p. 147
 Clayman, H. S. and G. S. Schairer—"Maximum Reliability of a Design," Dec. 12, p. 182
 Coburn, Richard—"Man-Machine Systems," May 16, p. 110
 Coffin, John G.—"Reinforced Plastic Panels," Jan. 24, p. 114
 Cohen, Gerald D.—"Predicting Performance Failures," Oct. 3, p. 106
 Cowie, Alex—"Elastic Mounting Pads," Sept. 19, p. 171
 Cox, A. Bruce
 "Fitting Equations to Experimental Data," Jan. 24, p. 95
 "Finding Equations to Fit Test Data," Apr. 18, p. 153
 Cunningham, E. R. and G. L. Wolfert—"Reducing Noise," Mar. 7, p. 118

D, E

- David, E. E. Jr.—"Voice-Actuated Machines," Oct. 17, p. 168
 Davis, D. S.—"Pipe Bends," Jan. 24, p. 113
 Dicely, Ralph W. and H. J. Long—"Socket-Head Cap Screws," Sept. 5, p. 117
 Dickerson, E. O.—"Joint Efficiency," Oct. 17, p. 164
 DiTaranto, R. A.
 "Nonuniform Beams," Apr. 18, p. 165
 "Natural Frequencies of Beams," Oct. 3, p. 133
 Dobbins, Paul J.—"Applying Induction Motors," Dec. 26, p. 81
 Eagan, W. F.—"Magnetic Amplifiers," May 30, p. 96
 Elliott, H. M.—"From Engineer to Supervisor," Oct. 31, p. 62

F

- Farr, H. D. and H. F. Prasse—"Rotary Positive-Displacement Pumps," Sept. 19, p. 174
- Felgar, R. P. and J. N. Macduff—"Vibration Frequency Charts," Feb. 7, p. 109
- Fiderer, Leo—"Bearing Capacity Ratings," Dec. 12, p. 133
- Fitzgibbon, Thomas F.—"Packaging Hydraulics Components," Sept. 5, p. 101
- Flannelly, William G.—"Irregular Areas," Nov. 28, p. 135
- Fortini, Earlwood T.—"Efficient Drafting Practice," Mar. 21, p. 112
- Foskett, R. D. and E. A. Neppiras—"Ultrasonic Machining," Sept. 5, p. 121
- Freeman, R. R. and J. Z. Briggs—"Molybdenum Alloys," Feb. 21, p. 137
- Freudenstein, F., K. L. Wartham, and A. B. Watrous—"Gear-Train Limit Stops," May 30, p. 84

G

- Garner, E. V.—"Stress in Rotating Cylinders," July 11, p. 159
- Geckler, Vernon C.—"High-Frequency Motors," Sept. 5, p. 126
- Glie, Rowen—"Reducing Drafting Costs," June 27, p. 74
- Goldblum, K. B. and R. J. Thompson—"Lexan Plastics," Dec. 26, p. 116
- Goldin, Robert—"Thermal-Creep Design Criteria," Oct. 17, p. 166
- Gorten, George—"Impact Loads in Gear Trains," Mar. 7, p. 83
- Gray, Albert Woodruff
- "Permanent Employment Contracts," Jan. 10, p. 101
 - "When Are Published Inventions Patentable?," Apr. 4, p. 95
 - "Right of Invention," May 2, p. 81
 - "Oral Employment Contracts," May 30, p. 69
 - "Employment Contracts," June 27, p. 83
 - "Breach of Employment Contracts," July 25, p. 80
 - "Patentable Inventions," Sept. 19, p. 120
 - "Satisfactory-Performance Contracts," Oct. 17, p. 121
 - "Patent Pools," Nov. 14, p. 116
- Grutsch, Ralph and Herbert Pritzlaff—"Oral Communications," Aug. 8, p. 122
- Gutman, Alfred S.—"Cooling Electronic Equipment," Sept. 19, p. 141

H

- Haffner, Alfred—"Designing Vibration Mockups," Sept. 19, p. 157
- Halverstadt, R. D.—"Machining Heat-Resistant Alloys," June 13, p. 163
- Hanneman, W. M.—"Belleville Spring Washers," Oct. 31, p. 107
- Hansen, John V. E.—"Technical Writers," Nov. 28, p. 94
- Harding, Bruce L.—"Four-Bar Linkages," Nov. 28, p. 136
- Harris, W. R.—"Electric Motors," Nov. 28, p. 109
- Hart, W. C. and B. Rubin—"Dry-Film Lubricants," Sept. 19, p. 184
- Hartenberg, R. S.—"Giant Linkages," May 16, p. 118
- Hartenstein, R. G. and J. J. Kerley Jr.—"Cable Vibration Mounts," Aug. 8, p. 99
- Hastings, George S.—"Outside Inventors," Aug. 22, p. 90
- Havemeyer, Howard R.—"Linear Ball Bushings," Aug. 22, p. 120
- Hayes, M. V.—"Numerically Controlled Machine Tools," Oct. 31, p. 115
- Hayes, V. H.—"Thermal Expansion of Materials," Mar. 7, p. 111
- Heim, Arthur J.—"Copper-Alloy Forgings," Feb. 7, p. 100
- Helmick, C. G.—"Feedback Control," Aug. 8, p. 118

- Helming, F. W., Sr.—"Socket Head Cap and Set Screws," Feb. 7, p. 122
- Holt, John B. and William S. Miller—"Dynamic Seals and Packings," Oct. 31, p. 69
- Hugo, R. L.—"Hot Extrusion and Cold Drawing," May 16, p. 127
- Hummel, Edwin C.—"Standardizing Engineering Reports," Oct. 3, p. 98

J

- Jackson, E. G. and E. R. Booser—"Bearings," May 2, p. 114
- Jantz, Frederick—"Graphic Illustration," June 13, p. 168
- Jeans, Hans—"Designing Cam Profiles," Oct. 31, p. 103
- Johnson, Ray C.
- "Cam Dynamics," Feb. 7, p. 105
 - "Cam Design," Nov. 14, p. 159
- Jordan, Louis G.—"Adjustable-Speed Hydraulic Transmissions," Jan. 24, p. 100

K

- Kaplan, Joseph—"Spring Clutches," Apr. 4, p. 105
- Kattus, J. R.—"Cast Iron," May 30, p. 100
- Keller, George R. and Paris H. Stafford—"Pressurized Metallic Seals," May 16, p. 154
- Keller, J. W.—"Wiring Methods," Oct. 3, p. 121
- Kerley, J. J. Jr.—"Design in the Plastic Region," Nov. 14, p. 153
- Kerley, J. J. Jr. and R. G. Hartenstein—"Cable Vibration Mounts," Aug. 8, p. 99
- Ketcham, Howard—"Color in Design," Feb. 7, p. 83
- Keyes, John H.—"Helical Compression Springs," July 25, p. 105
- King, G. William—"The Engineering Shortage," July 25, p. 72
- Kingery, W. D., J. D. Klein, and M. C. McQuarrie—"Ceramic Insulating Materials," Oct. 3, p. 139
- Kirkham, Edward E.—"Precise Automatic Positioning," Jan. 24, p. 120
- Klein, J. D., W. D. Kingery, and M. C. McQuarrie—"Ceramic Insulating Materials," Oct. 3, p. 139
- Korkut, M. Deha—"Finding Areas," June 27, p. 109
- Kozlik, R. K.—"Nickel-Base Alloys," Aug. 22, p. 139
- Krieble, Robert H.—"Liquid Thread-Locking Agents," Sept. 19, p. 129

L

- Lampson, F. K.—"Precipitation-Hardening Steels," Dec. 12, p. 180
- LaRou, L. V.—"Brazing," Nov. 14, p. 132
- Larson, Gustav A.—"Preferred Gear Sizes," Aug. 8, p. 113
- Laughlin, E. J.—"DC Power Sources," May 16, p. 151
- Lefort, H. G., R. M. Spriggs, and D. G. Bennett—"Ceramic Structural Adhesives," Oct. 31, p. 114
- Lenz, Robert—"Modifying Cam Accelerations," Sept. 19, p. 168
- Lewis, T. E. and J. C. Meekins—"Aluminum in Electrical Systems," July 11, p. 170
- Linderorth, L. Sigfred Jr.—"High-Speed Electronic Computers," Mar. 7, p. 72
- Long, H. J. and Ralph W. Dicely—"Socket-Head Cap Screws," Sept. 5, p. 117

M

- Macduff, J. N. and R. P. Felgar—"Vibration Frequency Charts," Feb. 7, p. 109
- Maginniss, F. J., D. H. Ware and W. J. Martiny—"Controlling Design and Engineering," June 13, p. 170

- Marieni, G. J. and W. Stepanuk—"Circuit Protection Relays," Oct. 3, p. 140
- Marin, Joseph
 "Design for Fatigue Loading"
 Part 1, " Jan. 24, p. 88
 Part 2, " Feb. 7, p. 95
 Part 3, " Feb. 21, p. 124
 Part 4, " Mar. 7, p. 95
 Part 5, " Mar. 21, p. 154
- Marous, J. C.—"DC Braking of AC Motors," Oct. 31, p. 115
- Martino, Peter V.—"Product Development Costs," Feb. 21, p. 90
- Martiny, W. J., D. H. Ware, and F. J. Maginniss—"Controlling Design and Engineering," June 13, p. 170
- Marvin, Philip
 "Engineering The Creative Process," Jan. 10, p. 94
 "Planning Product Strategy," June 13, p. 110
 "Ideas for New Product Programs," July 11, p. 114
 "New Product Development," Aug. 8, p. 76
 "New-Product Ideas," Sept. 5, p. 78
 "Research for Results," Oct. 17, p. 110
 "Engineering for Product Development," Dec. 26, p. 70
- Mataich, Peter F.—"Friction-Seal Materials," Sept. 19, p. 186
- Maynard, Charles A.—"Permanent Magnet Assemblies," Apr. 18, p. 122
- McQuarrie, M. C., W. D. Kingery, and J. D. Klein—"Ceramic Insulating Materials," Oct. 3, p. 139
- Meekins, J. C. and T. E. Lewis—"Aluminum in Electrical Systems," July 11, p. 170
- Merz, Kenneth A.
 "Combined Blower-Motor Performance," Oct. 17, p. 131
 "Kinematic Viscosity and Reynold's Number," Dec. 12, p. 173
- Meyer, Ralph J.—"Designing Efficient Controls," May 30, p. 102
- Middleton, Walter C.—"Exploiting Inventions," May 16, p. 153
- Mikulak, John—"Designing Low-Cost Weldments," Sept. 19, p. 135
- Miller, William S.—"Speed Reducers and Gearmotors," Mar. 21, p. 121
- Miller, William S. and John B. Holt—"Dynamic Seals and Packings," Oct. 31, p. 69
- Moore, E. R.—"Computer Operation," Feb. 21, p. 146
- Moritz, J. M. and H. L. Stewart
 "Hydraulic Cylinders," May 2, p. 94
 "Clamping with Fluid Power," Oct. 3, p. 112
- Morrison, James B.—"O-Rings and Interference Seals," Feb. 7, p. 91
- Muller, H. H. and R. W. Beckim—"Chemical Milling," —June 13, p. 153
- Mulvey, B. J.—"Electric Insulation Materials," July 11, p. 168
- Musgrave, David E.—"Voltage-Stabilizing Transformers," June 13, p. 124
- N**
- Nachman, J. E. and W. J. Buehler—"Thermenol Alloys," Oct. 3, p. 138
- Nathanson, B.
 "Thin-Wall Plastic Parts," July 11, p. 146
 "Modified Styrene Plastics," Nov. 14, p. 163
- Neppiras, E. A. and R. D. Foskett—"Ultrasonic Machining," Sept. 5, p. 121
- Neuville, Harlan S.—"Controlling AC Motor Speed," Dec. 26, p. 114
- Nevis, Edwin C.
 "The Personal Side of Engineering," Apr. 18, p. 164
 "What Are Engineers Made Of?"
 Part 1, " May 2, p. 109
 Part 2, " May 30, p. 87
- "Is Selling for Me?" June 27, p. 101
- "The Engineer as an Executive," July 25, p. 103
- "Reducing Recruiting Costs," Sept. 5, p. 107
- "Developing Managerial Talent," Oct. 3, p. 132
- "Applying Your Creative Potential," Dec. 12, p. 159
- Nightingale, J. M.
 "Hydraulic Servos"
 Part 1, " Feb. 21, p. 109
 Part 2, " Mar. 7, p. 100
 Part 3, " Mar. 21, p. 160
- "Improving Servo-System Performance"
 Part 1, " May 30, p. 76
 Part 2, " June 13, p. 142
- "Servo Systems"
 Part 1—Terms Affecting Gain and Phase," July 11, p. 132
 Part 2—Logarithmic Response Curves," July 25, p. 89
 Part 3—Gain-Phase Relationships," Aug. 8, p. 90
- Noon, Walter—"The Analog Computer," July 11, p. 163
- O, P**
- Olson, A. I.—"Special Hinges," July 11, p. 152
- Pan, H. H.—"Cam Curves and Cutter Pitch Curves," July 11, p. 137
- Papp, M. W.—"Standards for Performance Quality," May 2, p. 74
- Paulson, Richard—"Engineering Department Efficiency," Dec. 12, p. 122
- Pearce, B. L.—"Power Transmission Chain," Mar. 7, p. 112
- Perry, C. C. and C. F. Alban—"Thermostatic Bimetal Elements," Feb. 21, p. 119
- Peterson, H. S. and A. T. Templin—"Induction Brazing," Mar. 21, p. 150
- Peterson, R. E.—"Stress Concentrations as Design Factors," Aug. 22, p. 142
- Phair, R. J.—"Conductive and Resistive Coatings," Oct. 17, p. 161
- Popper, Boas J.—"Radial Gear Shifting," Sept. 5, p. 116
- Potts, P. S. and P. T. Schuerman—"Electric Dynamometers," June 27, p. 102
- Prasse, H. F. and H. D. Farr—"Rotary Positive-Displacement Pumps," Sept. 19, p. 174
- Predale, John O.—"States of Stress," June 13, p. 157
- Pritzlaff, Herbert and Ralph Grutsch—"Oral Communications," Aug. 8, p. 122
- Promisel, N. E.—"High-Temperature Alloys," July 25, p. 108
- R**
- Rappaport, Sigmund—"Small Indexing Mechanisms," Apr. 18, p. 161
- Recca, P. F. and Fred W. Smith—"Small Extension Springs," May 2, p. 102
- Reethof, Gerhardt and Leroy Taylor—"Hydraulic Servomechanisms," Apr. 18, p. 170
- Reeves, Thomas C.—"Thermal Design in Electronic Equipment," May 2, p. 84
- Richards, Archer W.—"Outside Engineering Firms," Apr. 18, p. 114
- Rosenberg, Harry—"Synchro Systems," Nov. 28, p. 140
- Rothenberg, Morris—"Subfractional-Horsepower Motors," May 16, p. 120
- Rubin, B. and W. C. Hart—"Dry-Film Lubricants," Sept. 19, p. 184
- Rubin, Sheldon—"Shock and Vibration Isolators," Dec. 26, p. 116
- Rupp, J. W. and G. W. Cameron—"Evaluating Design Changes," Oct. 3, p. 139
- Rutter, James D.—"Tangent Circles," Oct. 31, p. 111

S

- Saelman, B.
 "Pressurized Cylinders and Spheres," Apr. 4, p. 121
 "Hydraulic Actuating Systems," May 16, p. 131
 Saint-Amour, Paul—"Applying Meter-Relays," Jan. 10, p. 133
 Sams, J. E.—"Enameling Aluminum-Coated Steel," Jan. 10, p. 146
 Scalzo, Augustine J.—"Bearing Misalignment," May 16, p. 140
 Schairer, G. S. and H. S. Clayman—"Maximum Reliability of a Design," Dec. 12, p. 182
 Schakel, R. A. and C. O. Sundberg—"Roller-Chain Drives," Nov. 14, p. 173
 Scharf, A. and C. F. Walton—"Designing Gray Iron Castings," Jan. 10, p. 104
 Schmidt, A. O. and E. J. Weiter—"Friction Characteristics of Flat Surfaces," Nov. 14, p. 178
 Schuchard, Walter F.—"Relay Application," Aug. 22, p. 144
 Schuerman, P. T. and P. S. Potts—"Electric Dynamometers," June 27, p. 102
 Schulz, P. G.—"Screw Threads," Aug. 8, p. 124
 Schwartz, Ivan H.—"Welding Cellular Plastics," Nov. 28, p. 138
 Sieggreen, H. G.—"Shell Castings," May 2, p. 112
 Smith, Fred W. and P. F. Recca—"Small Extension Springs," May 2, p. 102
 Smitzer, L. A.—"Friction Drive for Precision Positioning," May 30, p. 73
 Spagnuolo, Victor—"Explosionproof Electrical Controls," Jan. 24, p. 109
 Spector, Leo F.
 "Pin Fasteners
 Part 1—Semipermanent Assembly," Nov. 14, p. 122
 Part 2—Quick-Release Attachment," Dec. 12, p. 166
 Spriggs, R. M., D. G. Bennett, and H. G. Lefort—"Ceramic Structural Adhesives," Oct. 31, p. 114
 Stafford, Paris H. and George R. Keller—"Pressurized Metallic Seals," May 16, p. 154
 Stepanuk, W. and G. J. Marieni—"Circuit Protection Relays," Oct. 3, p. 140
 Stewart, H. L. and J. M. Moritz
 "Hydraulic Cylinders," May 2, p. 94
 "Clamping with Fluid Power," Oct. 3, p. 112
 Strasser, Federico
 "Plastic Moldings," Apr. 18, p. 144
 "Stamped Gears," Dec. 12, p. 161
 Suppiger, E. W.—"States of Stress," Dec. 26, p. 113
 Squires, R. F.—"Sealed Electrical Terminals," Apr. 4, p. 132
 Sullivan, G. L.—"Cubic Equations," Feb. 21, p. 135
 Sundberg, C. O. and R. A. Schakel—"Roller-Chain Drives," Nov. 14, p. 173
 Sweet, Donald E.—"Bolt-Hole Circles," May 2, p. 111

T

- Tabakman, H. D.—"Deflection of Circular Rings," Nov. 14, p. 167
 Taborek, Jaroslav J.
 "Mechanics of Vehicles
 Part 1—Motion of Wheels," May 30, p. 60
 Part 2—Cornering and Direction Control," June 13, p. 130
 Part 3—Steering Forces and Stability," June 27, p. 92
 Part 4—Stability on a Curve," July 11, p. 147
 Part 5—Motion-Resisting Forces," July 25, p. 98
 Part 6—Resistance Forces," Aug. 8, p. 101
 Part 7—Center of Gravity," Aug. 22, p. 128
 Part 8—Longitudinal Stability," Sept. 5, p. 109
 Part 9—Limits of Vehicle Performance," Sept. 19, p. 152

- Part 10—Performance Limits," Oct. 17, p. 143
 Part 11—Dynamics of Braking," Nov. 14, p. 136
 Part 12—Braking-Performance Limits," Nov. 28, p. 128
 Part 13—Powerplant Characteristics," Dec. 12, p. 148
 Part 14—Performance Prediction," Dec. 26, p. 92
 Talalay, Leon—"Properties of Cellular Plastics," Dec. 12, p. 175
 Talmage, Robert—"Sintered Steel Parts," June 27, p. 110
 Taylor, Leroy and Gerhardt Reethof—"Hydraulic Servomechanisms," Apr. 18, p. 170
 Templin, A. T. and H. S. Peterson—"Induction Brazing," Mar. 21, p. 150
 Theilman, Russell F.—"Detecting Resonant Frequencies," Nov. 14, p. 149
 Thoen, Richard L.—"Statistical Tolerancing," June 13, p. 121
 Tholstrup, H. L. and George F. Baldwin—"Data Storage Media," Apr. 18, p. 176
 Thompson, R. J. and K. B. Goldblum—"Lexan Plastics," Dec. 26, p. 116
 Tiplitz, Charles I.—"Fitting Equations," Aug. 8, p. 108
 Tombach, Harold—"Adhesive Joints," Apr. 4, p. 113
 Tuplin, W. A.—"Compound Epicyclic Gear Trains," Apr. 4, p. 100

V

- Viglione, Joseph—"Titanium Bolts," Aug. 8, p. 86
 Volda, George—"Flexible Printed Circuits," July 11, p. 124
 Votta, Frank A. Jr.
 "Special Spring Forms," Mar. 7, p. 106
 "Compression Springs," Apr. 4, p. 98
 "Nonlinear Springs," May 16, p. 144
 "Combination-Spring Assemblies," Sept. 19, p. 159

W, Z

- Wallace, John F. and Franz R. Brotzen
 "Gray Iron
 Part 1," Dec. 12, p. 154
 Part 2," Dec. 26, p. 85
 Wallace, William B. Jr.
 "Pressure Switches," Aug. 22, p. 106
 "Engineering Drawing," Nov. 28, p. 102
 Walton, C. F. and A. Scharf—"Designing Gray Iron Castings," Jan. 10, p. 104
 Ware, D. H., W. J. Martiny, and F. J. Maginniss—"Controlling Design and Engineering," June 13, p. 170
 Warthman, K. L., F. Freudenstein, and A. B. Watrous—"Gear-Train Limit Stops," May 30, p. 84
 Watrous, A. B., F. Freudenstein, and K. L. Warthman—"Gear-Train Limit Stops," May 30, p. 84
 Weiter, E. J. and A. O. Schmidt—"Friction Characteristics of Flat Surfaces," Nov. 14, p. 178
 White, J. Coleman—"Computer as Design Tools," Jan. 24, p. 83
 Wilke, H. L.—"Hydraulic Torque Converters," Feb. 7, p. 116
 Wilkins, W. G.—"Vacuum Plaster-Mold Castings," Nov. 28, p. 106
 Wilson, R. B.
 "Designing for Reliability," Jan. 10, p. 140
 "Checkpoints for Design Improvement," Aug. 22, p. 148
 Witt, Douglas R.—"Hand-Control Design," Dec. 26, p. 78
 Woerter, Everett—"Part-Numbering System," Apr. 4, p. 88
 Wolak, J.—"Graphical Integration," Oct. 17, p. 157
 Wolfert, G. L. and E. R. Cunningham—"Reducing Noise," Mar. 7, p. 118
 Wren, J. B.—"Integral Horsepower Motors," Oct. 31, p. 116
 Zasa, J. D.—"Rotary Solenoids," Feb. 21, p. 114
 Zimmerman, J. R.—"H₂ droforming," June 27, p. 86

Subject Index

A

- Accelerometers, Jan. 24, p. 168; Mar. 21, p. 230; May 30, p. 120; Sept. 19, p. 259
- Actuators, Feb. 7, p. 202; Feb. 21, p. 181; Apr. 4, p. 212; Apr. 18, p. 252; May 2, p. 132; May 16, p. 131, 252, 270, 320; May 30, p. 124; July 11, p. 221, 237; Aug. 8, p. 84, 168; Sept. 5, p. 5; Sept. 19, p. 212, 226, 234, 265, 297; Dec. 12, p. 126; Dec. 26, p. 138
- Adapters, shaft, June 13, p. 238
- Adhesive joints, Apr. 4, p. 113
- Adhesives, Jan. 10, p. 176; Jan. 24, p. 148; May 16, p. 204, 206; June 13, p. 233; Sept. 19, p. 224; Oct. 17, p. 186; Oct. 31, p. 14, 113; Nov. 14, p. 37; Nov. 28, p. 180
- Agricultural equipment, Jan. 24, p. 5; Mar. 21, p. 159; Apr. 4, p. 10
- Air conditioner, quick-mounting, Feb. 21, p. 118
- Air traffic control, May 2, p. 30
- Aircraft, nuclear-powered, Nov. 28, p. 14
- Airplane landing system, automatic, Apr. 18, p. 28
- Aluminum and alloys, May 16, p. 206; July 11, p. 170; Aug. 22, p. 15; Nov. 28, p. 10; Dec. 26, p. 124
- Aluminum truck body, July 11, p. 10; Oct. 3, p. 138
- Amplifiers, Feb. 21, p. 157; Mar. 21, p. 253; May 16, p. 228; June 13, p. 219, 252; Aug. 8, p. 32, 172, 178, 182; Aug. 22, p. 172; Sept. 5, p. 152; Oct. 3, p. 201; Oct. 17, p. 192, 245
- magnetic, May 30, p. 96
- Arbor, adjustable-diameter, Sept. 19, p. 148
- Areas, calculation of, June 27, p. 109; Nov. 28, p. 135
- Atomic energy, Nov. 14, p. 36
- Automobile developments, Jan. 10, p. 5; Mar. 21, p. 8
- Automobile research, Apr. 18, p. 5
- Automobile trim, May 2, p. 10
- Automobiles, Apr. 18, p. 10, 26; May 16, p. 14; Aug. 8, p. 24; Sept. 5, p. 10; Dec. 26, p. 25
- 1957, July 11, p. 6
- 1958, Sept. 19, p. 12; Oct. 17, p. 136; Oct. 31, p. 24; Nov. 14, p. 8; Nov. 28, p. 22
- Automotive equipment, June 13, p. 22

B

- Ball and socket joints, July 11, p. 205
- Ball joints, Mar. 21, p. 202
- Balls, Dec. 12, p. 202
- Band saw, articulated, May 2, p. 100
- Bases, machine, June 27, p. 132
- Batteries, June 27, p. 5; July 11, p. 12; July 25, p. 5; Nov. 14, p. 228
- miniature, Mar. 21, p. 10
- Battery connectors, June 27, p. 139
- Beam frequencies, Oct. 3, p. 133
- Beams, Feb. 21, p. 103
- nonuniform, Apr. 18, p. 165
- Bearing, ball unit, May 30, p. 114; July 11, p. 189; July 25, p. 130, 154; Aug. 8, p. 180; Sept. 5, p. 164
- Bearing materials, May 2, p. 114; Aug. 22, p. 139; Sept. 19, p. 22; Oct. 3, p. 187, 216
- Bearing misalignment, May 16, p. 140
- Bearings, ball, Jan. 24, p. 157; May 2, p. 141; May 16, p. 236; Nov. 14, p. 202; Dec. 12, p. 133
- linear motion, Jan. 10, p. 178; Mar. 7, p. 200; June 27, p. 143; Aug. 22, p. 120
- miniature, May 2, p. 141
- needle, Apr. 18, p. 222
- rod-end, May 30, p. 126; Oct. 3, p. 158; Dec. 12, p. 264

- roller, Jan. 24, p. 157; Apr. 4, p. 186; Apr. 18, p. 188; Aug. 22, p. 99; Dec. 12, p. 133, 216
- sleeve, Apr. 18, p. 188; June 13, p. 118; June 27, p. 143; Sept. 19, p. 298; Oct. 31, p. 128; Nov. 14, p. 208; Nov. 28, p. 191, 210; Dec. 26, p. 126
- thrust, Feb. 21, p. 190; May 2, p. 156; June 13, p. 212
- Belleville spring washers, Oct. 31, p. 100
- Bellows, Apr. 18, p. 202; May 16, p. 136; July 11, p. 198; July 25, p. 152; Nov. 28, p. 172; Dec. 12, p. 194
- Belts, conveyor, Nov. 14, p. 147; Dec. 12, p. 143
- transmission, Oct. 3, p. 158; Oct. 17, p. 192, 228; Oct. 31, p. 139; Nov. 14, p. 147; Dec. 12, p. 143
- Bimetal, Feb. 21, p. 119; Mar. 21, p. 218; Nov. 14, p. 274
- Blower motors, Oct. 17, p. 131
- Blowers, Jan. 24, p. 138; Feb. 7, p. 160; Mar. 21, p. 238; May 2, p. 144; May 16, p. 292; May 30, p. 118; Aug. 8, p. 166, 170; Aug. 22, p. 115; Dec. 12, p. 248
- Bobbins, June 13, p. 179
- coil, May 16, p. 282
- plastic, Mar. 7, p. 163
- Bolt-hole circles, May 2, p. 111
- Boots, mechanical, Jan. 10, p. 185
- Boring head, Mar. 7, p. 165
- Bottle unloader, Oct. 3, p. 100
- Brackets, mounting, Feb. 7, p. 163
- Brakes, May 16, p. 232; June 13, p. 192; Aug. 8, p. 152, 208; Aug. 22, p. 168; Sept. 19, p. 204, 212, 297; Oct. 3, p. 178; Oct. 17, p. 221; Nov. 14, p. 208, 240, 258, 289; Nov. 28, p. 188; Dec. 12, p. 262
- electric, June 27, p. 81
- Braking, dynamics of, Nov. 14, p. 136
- Braking performance limits, Nov. 28, p. 126
- Brass (see Copper and alloys)
- Brazing, May 30, p. 118; Nov. 14, p. 132
- induction, Mar. 21, p. 150
- Bread slicer, July 11, p. 141
- Bronze (see Copper and alloys)
- Brushes, commutator, Feb. 21, p. 175
- Bushings, Feb. 7, p. 148; Oct. 3, p. 163
- ball, Jan. 10, p. 178; Aug. 22, p. 120

C

- Cable, delay, Mar. 21, p. 204
- electrical, Aug. 8, p. 30; Aug. 22, p. 160
- Cables, coaxial, miniature, Dec. 12, p. 194
- Cam acceleration, modifying, Sept. 19, p. 168
- Cam follower, May 2, p. 128
- Camera, June 13, p. 136
- microfilming, May 16, p. 204
- television, May 2, p. 98
- television, small, Feb. 21, p. 22
- Cameras, May 16, p. 33
- high-speed, June 27, p. 8
- Cams, Feb. 7, p. 105; May 30, p. 135; July 11, p. 137; Aug. 22, p. 135; Oct. 31, p. 67, 103; Nov. 14, p. 159
- Capacitors, Feb. 7, p. 158; Mar. 21, p. 201; May 16, p. 270; Aug. 8, p. 192; Sept. 5, p. 180; Sept. 19, p. 259, 260; Oct. 31, p. 124; Nov. 28, p. 164; Dec. 12, p. 228
- Caps, Apr. 4, p. 146; Oct. 17, p. 184; Nov. 28, p. 187
- Carbon and graphite parts, Nov. 28, p. 178
- Cases, aluminum, May 16, p. 226
- Casters, Mar. 21, p. 244; June 13, p. 244; Oct. 3, p. 176; Oct. 17, p. 195, 238; Nov. 28, p. 164
- Castings, Nov. 28, p. 6
- investment, Aug. 22, p. 133
- iron, Jan. 10, p. 104; Jan. 24, p. 6; May 30, p. 100; Dec. 26, p. 85
- light alloy, Sept. 19, p. 149
- nonferrous, May 2, p. 28

- shell-molded, Mar. 7, p. 88; May 2, p. 112
 sliced, Jan. 10, p. 100
 steel, Dec. 26, p. 6
 vacuum plaster-mold, Nov. 28, p. 106
 Cells, conductivity, Dec. 12, p. 233
 solar, silicon, Dec. 12, p. 196
 Center of gravity, Jan. 10, p. 123
 Ceramics, fine crystalline, June 27, p. 12
 Ceramoplastics, Dec. 12, p. 211
 Chain, conveyor, May 30, p. 116; June 13, p. 184; Aug. 8, p. 158
 transmission, Mar. 7, p. 112; May 16, p. 234; Nov. 14, p. 173
 Choppers, dc-ac, June 13, p. 200
 Circles, tangent, Oct. 31, p. 111
 Circuit, etched, May 16, p. 208
 printed, flexible, July 11, p. 124
 unitized, July 11, p. 198
 Circuit breakers, Mar. 7, p. 150; May 16, p. 115, 254; May 30, p. 112, 124; July 25, p. 130, 166; Dec. 12, p. 146
 Circuit components, Feb. 21, p. 203
 Circuits, printed, June 13, p. 22, 28
 printed, three-dimensional, Mar. 21, p. 118
 Clamping with fluid power, Oct. 3, p. 112
 Clamps, Jan. 10, p. 182; Jan. 24, p. 134, 152; Mar. 7, p. 180, 200; Mar. 21, p. 190; Apr. 18, p. 258; May 16, p. 238, 267; May 30, p. 110; June 27, p. 136; Aug. 8, p. 150; Aug. 22, p. 116; Sept. 19, p. 228; Oct. 3, p. 164; Oct. 17, p. 119; Nov. 14, p. 206; Dec. 12, p. 254
 Clips, cable, June 13, p. 194
 fuse, May 30, p. 120
 locking, Dec. 26, p. 124
 Clutches, Jan. 10, p. 132; Jan. 24, p. 186; Feb. 7, p. 150; Feb. 21, p. 164, 234; Mar. 7, p. 128, 202; Mar. 21, p. 207; Apr. 4, p. 146, 181; Apr. 18, p. 150, 226; May 2, p. 130; May 16, p. 204, 206, 257, 267; June 13, p. 192, 220, 278; July 11, p. 122, 204, 234; Aug. 8, p. 98, 138, 183, 208; Sept. 5, p. 157, 159; Sept. 19, p. 204, 234, 252, 264; Oct. 3, p. 120, 169, 178, 194; Nov. 14, p. 208, 216, 242, 258; Nov. 28, p. 99, 188, 208; Dec. 12, p. 219, 226; Dec. 26, p. 76, 124, 131
 spring, Apr. 4, p. 105
 Coatings (see also Finishes)
 Coatings, conductive, Oct. 3, p. 14; Oct. 17, p. 161
 protective, Jan. 10, p. 146; Feb. 7, p. 132; Mar. 7, p. 140, 146; Mar. 21, p. 172, 204; Apr. 4, p. 160; May 16, p. 211, 260; May 30, p. 114; June 13, p. 219; July 25, p. 132; Dec. 26, p. 125
 Coil forms and collars, Apr. 18, p. 208; July 11, p. 218
 Coils, May 2, p. 128; June 13, p. 212
 Collector ring, Apr. 4, p. 156
 Color, Feb. 7, p. 83
 Communications equipment, May 16, p. 5
 Compass, May 2, p. 15
 Compressors, Apr. 18, p. 206; Aug. 8, p. 84, 112
 Computer, high-speed electronic, Mar. 7, p. 73
 Computer components, Jan. 10, p. 216; Jan. 24, p. 130; Feb. 7, p. 171; Feb. 21, p. 198; Mar. 7, p. 5; Mar. 21, p. 224; Apr. 4, p. 172; May 16, p. 208; June 13, p. 278; June 27, p. 148; July 11, p. 238; Aug. 8, p. 143, 180; Oct. 17, p. 245; Oct. 31, p. 32; Nov. 14, p. 192; Dec. 26, p. 5, 14
 Computer operation, Feb. 21, p. 146
 Computers, Jan. 24, p. 83; Apr. 4, p. 200; May 2, p. 22; May 16, p. 300; June 13, p. 254; June 27, p. 28; July 11, p. 163; July 25, p. 167; Oct. 3, p. 205; Oct. 17, p. 138; Nov. 14, p. 121, 269; Nov. 28, p. 199; Dec. 12, p. 8, 128; Dec. 26, p. 26, 133
 Conductors, electric, Nov. 14, p. 224; Dec. 12, p. 244
 Conduit, Apr. 4, p. 162; May 16, p. 246; July 11, p. 216; Aug. 22, p. 169; Sept. 19, p. 204
 Connectors, coil-spring, Mar. 21, p. 278
 electric, Feb. 21, p. 154, 162; Mar. 7, p. 128, 165; Mar. 21, p. 186, 210; Apr. 4, p. 94; Apr. 18, p. 204, 234, 238; May 16, p. 264, 294; June 13, p. 214; June 27, p. 132; July 11, p. 202; Sept. 5, p. 142; Sept. 19, p. 248; Oct. 3, p. 169, 192; Oct. 17, p. 184
 Contactors, May 16, p. 241, 287
 Contacts, Apr. 18, p. 228; May 16, p. 224, 262; July 25, p. 113; Oct. 17, p. 121; Nov. 14, p. 216; Dec. 12, p. 208; Dec. 26, p. 76
 Contracts, employment, May 30, p. 69; July 25, p. 80
 Control mountings, Feb. 7, p. 132
 Control of vehicles, June 13, p. 130
 Control panels, May 16, p. 244
 Control systems, electric, May 2, p. 79, 131; May 30, p. 96; June 13, p. 138; June 27, p. 82; July 25, p. 95, 128; Aug. 22, p. 117; Oct. 31, p. 99; Nov. 14, p. 228, 260; Nov. 28, p. 120
 hydraulic, Apr. 18, p. 170, 224; July 25, p. 96; Aug. 8, p. 96; Aug. 22, p. 101; Sept. 19, p. 128; Nov. 14, p. 238
 pneumatic, Apr. 18, p. 208, 224
 Controls, automatic, Jan. 10, p. 174; Jan. 24, p. 120; Feb. 7, p. 82, 140, 206; Mar. 21, p. 258; Apr. 4, p. 93, 184, 189; Apr. 18, p. 150, 176, 202; May 16, p. 22, 244, 280; May 30, p. 12, 92, 116; June 13, p. 240, 244; July 11, p. 121, 142, 144, 209; Aug. 22, p. 164, 186; Sept. 5, p. 142; Sept. 19, p. 230; Oct. 17, p. 232; Oct. 31, p. 15, 115, 122; Nov. 14, p. 250; Nov. 28, p. 159
 efficient, May 30, p. 102
 electric, Feb. 7, p. 206; Feb. 21, p. 154; Mar. 7, p. 160; Mar. 21, p. 213, 247, 258; Apr. 4, p. 144, 148; May 16, p. 206; July 11, p. 227; July 25, p. 158; Aug. 8, p. 162, 188; Aug. 22, p. 160, 197; Sept. 5, p. 174; Sept. 19, p. 260; Oct. 3, p. 174, 197; Oct. 31, p. 115; Nov. 14, p. 120, 146, 228; Dec. 26, p. 114
 electric, explosionproof, Jan. 24, p. 109
 hand, Dec. 26, p. 78
 hydraulic, Feb. 21, p. 167; Mar. 7, p. 137; Apr. 4, p. 176; Apr. 18, p. 170; June 13, p. 240; Aug. 8, p. 154, 158, 182; Nov. 14, p. 258; Dec. 26, p. 126
 mechanical, Feb. 7, p. 206; Apr. 18, p. 216; May 16, p. 244; May 30, p. 135; June 13, p. 140; June 27, p. 124; Aug. 8, p. 206; Sept. 19, p. 150; Oct. 31, p. 138; Nov. 14, p. 148; Nov. 28, p. 98, 101, 118; Dec. 26, p. 75
 pneumatic, Mar. 7, p. 160; Mar. 21, p. 224; Apr. 18, p. 234, 239; May 2, p. 130; May 16, p. 230; June 13, p. 184, 196; July 25, p. 160; Aug. 8, p. 182; Dec. 12, p. 233
 pressure, June 13, p. 189
 Converters, phase voltage, June 13, p. 194
 power, June 13, p. 188, 238
 Conveyor, oscillating, Apr. 18, p. 152
 Conveyors, Oct. 17, p. 117
 Cooling fins, Sept. 5, p. 97
 Copper and alloys, Jan. 10, p. 164; Feb. 7, p. 100; Mar. 21, p. 244; Aug. 8, p. 162; Sept. 5, p. 162
 Cord, stretchable, Apr. 4, p. 154
 Cores, coil, May 2, p. 144
 Corner angles, Mar. 21, p. 165
 Corrosion, galvanic, Jan. 10, p. 139
 Corrosion-resistant alloys, Mar. 7, p. 27

Costs, product development, Feb. 21, p. 90
 Counters, Jan. 10, p. 192; Feb. 21, p. 170; Mar. 7, p. 142, 186; Mar. 21, p. 213; Apr. 4, p. 199; May 16, p. 220; June 13, p. 242; July 11, p. 224; July 25, p. 138; Aug. 22, p. 182; Sept. 5, p. 152; Oct. 17, p. 142, 218; Nov. 14, p. 233, 250
 Couplings, fluid, Nov. 28, p. 171
 shaft, Feb. 21, p. 160, 200; May 2, p. 126; May 16, p. 206, 211, 304; June 27, p. 133; July 11, p. 123, 240; Aug. 8, p. 170, 192; Aug. 22, p. 160, 184; Sept. 5, p. 177; Sept. 19, p. 296; Oct. 3, p. 170; Oct. 17, p. 201; Dec. 12, p. 302
 Covers, way, Feb. 21, p. 154
 Creative potential, Dec. 12, p. 159
 Creative process, Jan. 10, p. 94
 Creep, thermal, Oct. 17, p. 166
 Cubic equations, Feb. 21, p. 135
 Cutters, cable, July 25, p. 143
 Cylinders, May 16, p. 290; July 25, p. 136; Aug. 8, p. 150; Aug. 22, p. 174
 hydraulic, Feb. 21, p. 154; Apr. 4, p. 144; May 2, p. 94; May 16, p. 240; June 13, p. 226; July 11, p. 184; Sept. 19, p. 232; Nov. 14, p. 196; Dec. 12, p. 240
 pneumatic, Jan. 10, p. 178; Feb. 21, p. 154; Mar. 7, p. 140; Mar. 21, p. 221, 227; Apr. 4, p. 144, 148; Aug. 8, p. 172; Oct. 17, p. 198
 rotary, air-hydraulic, for indexing, Oct. 3, p. 104
 rotating, stress in, July 11, p. 159

D

Damper, May 16, p. 241
 vibration, Apr. 4, p. 212
 Data, fitting equations to, Jan. 24, p. 95
 Data processing, automatic, Jan. 24, p. 82
 Data storage media, Apr. 18, p. 176
 Design improvement checklist, Aug. 22, p. 148
 Dials, Feb. 21, p. 102; Mar. 7, p. 137, Aug. 8, p. 164; Sept. 5, p. 156
 Diamonds, artificial, Nov. 14, p. 15
 Diaphragm shields, July 11, p. 202
 Diaphragms, metallic, Sept. 9, p. 254
 Differentials, gear, Feb. 7, p. 132, 137; Apr. 4, p. 210; Sept. 9, p. 204; Nov. 28, p. 159; Dec. 12, p. 196
 mechanical, Nov. 14, p. 290
 Diodes, Mar. 21, p. 218
 Direct-current power sources, May 16, p. 151; Dec. 12, p. 275
 Display unit, digital, Apr. 4, p. 164
 Divider, flow, Mar. 21, p. 230
 Domestic equipment, Mar. 7, p. 79; Mar. 21, p. 158
 Drafting, efficient, Mar. 21, p. 112
 reducing costs of, June 27, p. 74
 simplified, Feb. 21, p. 104
 three-dimensional, June 27, p. 116
 Drafting equipment, Jan. 10, p. 191, 193; Jan. 24, p. 165, 168, 170; Feb. 7, p. 12, 176, 179; Feb. 21, p. 205; Mar. 7, p. 184, 188; Apr. 4, p. 194; Apr. 18, p. 242; May 2, p. 148, 150, 152; May 16, p. 298, 302, 305; May 30, p. 128; June 13, p. 254; June 27, p. 149; July 11, p. 231; July 25, p. 167; Aug. 8, p. 194, 196; Aug. 22, p. 204, 208; Sept. 5, p. 182, 184, 186; Sept. 19, p. 270, 274, 278; Oct. 17, p. 26, 240, 242; Oct. 31, p. 130, 131; Nov. 14, p. 262, 266; Nov. 28, p. 194, 196; Dec. 12, p. 268, 270, 272, 275
 Drag-torque mechanism, Jan. 24, p. 182
 Drawer-closer, automatic, Mar. 7, p. 79
 Drawing, cold, May 16, p. 127
 Drawing control, engineering, Nov. 28, p. 102

Drilling machine, mobile, June 27, p. 90
 Drive, friction, for precision positioning, May 30, p. 73
 Drives, adjustable-speed, Jan. 24, p. 164; Mar. 7, p. 130, 146; Mar. 21, p. 236; Apr. 4, p. 170; May 2, p. 142, 146; May 16, p. 204, 206; May 30, p. 118; Sept. 5, p. 98, 166; Sept. 19, p. 246; Nov. 14, p. 178, 202; Dec. 26, p. 114
 constant-speed, Sept. 19, p. 248
 reversible, Jan. 24, p. 182
 Dynamometers, electric, June 27, p. 102

E

Electric equipment (see specific type)
 Electronic components, July 25, p. 25, 114
 Electronic equipment, June 27, p. 80, 146, 148; Aug. 8, p. 172; Aug. 22, p. 191, 203; Oct. 3, p. 116, 163
 cooling, Sept. 19, p. 141
 thermal design in, May 2, p. 84
 Electroplating, Jan. 10, p. 15
 Employment contracts, June 27, p. 83
 oral, May 30, p. 69
 Enameling aluminum-coated steel, Jan. 10, p. 146
 Enclosures, Aug. 22, p. 192; Oct. 17, p. 120
 Endurance limit for ductile material, May 30, p. 93
 Engineer shortage, Dec. 12, p. 10
 Engineering department (see Management or Drafting)
 Engineering firms, outside, Apr. 18, p. 114
 Engines, Jan. 10, p. 180; Mar. 7, p. 148; Mar. 21, p. 222; Apr. 4, p. 10, 189; Apr. 18, p. 6, 26, 120; June 13, p. 5; July 25, p. 134; Sept. 19, p. 15; Oct. 31, p. 126; Nov. 28, p. 32; Dec. 12, p. 148
 Equations fitted to data, Jan. 24, p. 95; Apr. 18, p. 153; Aug. 8, p. 108
 Etched parts, Oct. 3, p. 176
 Expansion, thermal, Mar. 7, p. 111
 Explosionproof electrical controls, Jan. 24, p. 109
 Extension springs, small, May 2, p. 102
 Extrusion, May 16, p. 127

F

Fasteners, Jan. 24, p. 161; Mar. 7, p. 78, 156; Mar. 21, p. 120; Apr. 4, p. 94; May 2, p. 128; June 13, p. 148; Aug. 8, p. 154, 183; Aug. 22, p. 100; Sept. 19, p. 127, 136; Oct. 3, p. 158; Oct. 17, p. 164, 190; Nov. 28, p. 160, 190; Dec. 12, p. 204; Dec. 26, p. 124
 blind, Jan. 24, p. 155; May 16, p. 204, 218, 285; July 11, p. 189; Oct. 17, p. 214; Nov. 28, p. 159; Dec. 12, p. 300
 bolts, nuts, screws, Jan. 10, p. 156, 170, 174; Jan. 24, p. 136, 148, 158; Feb. 7, p. 122; Feb. 21, p. 157, 170, 178, 184, 190, 211; Mar. 7, p. 144; Mar. 21, p. 210; Apr. 4, p. 146, 152; Apr. 18, p. 254; May 2, p. 111, 134; May 16, p. 24, 204, 208, 276; May 30, p. 112; July 11, p. 184, 195, 206; July 25, p. 128, 140, 156; Aug. 8, p. 86, 124, 162, 168; Sept. 5, p. 117, 142; Sept. 19, p. 245; Oct. 3, p. 181; Oct. 17, p. 203; Oct. 31, p. 124; Nov. 14, p. 290; Nov. 28, p. 182; Dec. 12, p. 194, 211, 222; Dec. 26, p. 124
 insert, Jan. 10, p. 214; Apr. 18, p. 236; May 16, p. 250, 257; Sept. 19, p. 304; Oct. 31, p. 122
 locking, Feb. 7, p. 168; May 16, p. 204; June 27, p. 124; Aug. 8, p. 140; Sept. 5, p. 96; Sept. 19, p. 126; Nov. 14, p. 222, Dec. 12, p. 298
 pin, Jan. 10, p. 172; May 30, p. 134; Aug. 8, p. 138; Nov. 14, p. 122; Dec. 12, p. 166; Dec. 26, p. 77

rivet, May 16, p. 218, 285; July 11, p. 189; Aug. 8, p. 183; Sept. 19, p. 209
 studs, Aug. 22, p. 164
 Fatigue loading, Feb. 7, p. 95; Feb. 21, p. 124; Mar. 7, p. 95; Mar. 21, p. 154
 Fatigue strength, design for, Jan. 24, p. 88
 Felt, Apr. 4, p. 148; Sept. 5, p. 180
 Fiber, Sept. 5, p. 238
 Film splicer, May 16, p. 5
 Filters, Feb. 7, p. 174; May 16, p. 242; June 13, p. 136; July 11, p. 122; Sept. 5, p. 154; Sept. 19, p. 217; Nov. 14, p. 198; Dec. 12, p. 22
 radio-frequency, Feb. 7, p. 158
 Finishes (see also Coatings)
 Finishes, protective, Feb. 21, p. 203; June 13, p. 184; Oct. 31, p. 124
 Fire detectors, Mar. 7, p. 25; Mar. 21, p. 250
 Fits and limits, Oct. 3, p. 201
 Fittings, conduit, Jan. 10, p. 216; Feb. 7, p. 142; June 13, p. 198; Sept. 5, p. 166; Nov. 14, p. 236
 pipe, tube, and hose, Jan. 10, p. 156; Jan. 24, p. 136; Feb. 7, p. 137, 148, 160, 168; Mar. 7, p. 128, 137, 174; Mar. 21, p. 197; Apr. 4, p. 170; Apr. 18, p. 188, 194; May 16, p. 206, 218, 234, 249, 272; May 30, p. 122; June 13, p. 188, 220, 249; July 25, p. 178; Aug. 8, p. 176; Aug. 22, p. 166, 200
 Flow meter, Dec. 12, p. 200
 Forces, resistance, Aug. 8, p. 101
 Forgings, Feb. 7, p. 100
 Forming, Aug. 22, p. 5
 Freight cars, convertible, Jan. 10, p. 12
 Frequency, vibration, Feb. 7, p. 109
 Friction drive for precision positioning, May 30, p. 73
 Friction of flat surfaces, Nov. 14, p. 178

G

Gage protectors, Feb. 21, p. 162
 Gages, liquid-level, June 27, p. 82
 pressure, etc., (see also Instruments), Mar. 7, p. 188; May 2, p. 148; Sept. 19, p. 274; Oct. 17, p. 120
 Gaging system for automatic control, Oct. 3, p. 105
 Galvanic corrosion, Jan. 10, p. 139
 Gaskets, Apr. 18, p. 204; Aug. 8, p. 146
 Gear blanks, July 25, p. 150
 Gear shifting, radial, Sept. 5, p. 116
 Gear-train limit stops, May 30, p. 84
 Gear trains, compound epicyclic, Apr. 4, p. 100
 impact loads in, Mar. 7, p. 83
 Gears, Jan. 10, 187, 189, 216; Feb. 7, p. 204; Mar. 21, p. 119; Apr. 18, p. 121; May 2, p. 146; May 30, p. 116; June 13, p. 120; July 11, p. 214; July 25, p. 78, 110, 176; Aug. 8, p. 85, 113; Sept. 5, p. 84; Oct. 3, p. 160; Oct. 31, p. 122, 129; Dec. 12, p. 206, 242
 idler, Nov. 28, p. 121
 Generators, electric, Jan. 10, p. 99, 172; Feb. 21, p. 167; Mar. 7, p. 94, 144; Apr. 4, p. 111, 146; Apr. 18, p. 199, 213; May 16, p. 211, 232; June 27, p. 146; July 25, p. 140, 156; Sept. 19, p. 251; Dec. 12, p. 240
 ultrasonic, Mar. 21, p. 188
 Geneva drive, modified, Apr. 18, p. 161
 Geneva drives, Jan. 24, p. 146
 Geneva mechanisms, Sept. 5, p. 198
 Glase, Jan. 10, p. 6
 Government specifications, Feb. 7, p. 76
 Governors, Jan. 24, p. 186; May 16, p. 324
 Graphical integration, Oct. 17, p. 157
 Grinding, May 30, p. 15
 Grommets, May 16, p. 204; Nov. 28, p. 174

Gun, wind gage, May 30, p. 6
 Gyro, miniature, June 13, p. 252
 Gyros, Apr. 18, p. 216
 Gyroscope, miniature, Jan. 24, p. 10

H

Hammer, pile, Oct. 31, p. 28
 Handles, Jan. 10, p. 180; Mar. 21, p. 197; May 16, p. 211; May 30, p. 126; June 13, p. 246; Sept. 5, p. 47; Oct. 3, p. 118; Dec. 12, p. 226; Dec. 26, p. 78
 Heads, machine, Jan. 24, p. 162
 Heat exchangers, Jan. 24, p. 81; May 16, p. 214; May 30, p. 66; June 27, p. 143; Aug. 8, p. 204; Oct. 31, p. 68; Nov. 28, p. 208
 Heat-resistant alloys, Feb. 21, p. 172; June 13, p. 163; July 25, p. 108
 Heat treating, Dec. 26, p. 6
 Heaters, Jan. 24, p. 130; Mar. 7, p. 151; Apr. 4, p. 174, 190; Apr. 18, p. 219; May 16, p. 206; Oct. 31, p. 106
 Helicopter, large, May 30, p. 90
 Hinges, July 11, p. 152
 Hose, nonmetallic, May 2, p. 131; May 16, p. 234; June 13, p. 204
 Hubs, enclosure, Feb. 7, p. 145
 Human engineering, Jan. 24, p. 76
 Hydraulic equipment (see specific type)
 Hydroforming, June 27, p. 86

I, J

Illustrations, graphic, June 13, p. 168
 Impact loads in gear trains, Mar. 7, p. 83
 Indexing mechanisms, Apr. 18, p. 231, 252; May 16, p. 322
 small, Apr. 18, p. 161
 Indicators, Oct. 17, p. 205
 flow, Nov. 28, p. 166
 Induction brazing, Mar. 21, p. 150
 Inductors, miniature, Dec. 12, p. 200
 Industrial design, Aug. 22, p. 119
 Inspection, Jan. 24, p. 132
 Instruments, Jan. 10, p. 10, 191, 193; Jan. 24, p. 154, 157, 161, 168, 170; Feb. 7, p. 22, 176, 182; Feb. 21, p. 5, 101, 181, 205; Mar. 7, p. 177, 191; Mar. 21, p. 257; Apr. 4, p. 8, 110, 194; Apr. 18, p. 219, 241, 245; May 2, p. 128, 148, 150, 152; May 16, p. 214, 221, 240, 249, 258, 285, 297, 300, 304, 305; May 30, p. 10, 89, 120, 128; June 13, p. 137, 228, 230, 254; June 27, p. 89; July 11, p. 196, 204, 223, 229; July 25, p. 132, 150, 152, 168; Aug. 8, p. 186, 196; Aug. 22, p. 6, 191, 198; Sept. 5, p. 156, 177; Sept. 19, p. 240, 276; Oct. 17, p. 233, 235, 245, 246; Oct. 31, p. 6, 131; Nov. 14, p. 194, 238, 262, 264, 266, 271; Dec. 12, p. 270; Dec. 26, p. 10, 12, 91, 132
 Insulation, Feb. 21, p. 103; Mar. 21, p. 186; May 16, p. 206, 274; July 11, p. 168, 212; Sept. 19, p. 214, 264; Oct. 3, p. 139; Oct. 17, p. 211, 230; Nov. 14, p. 15; Dec. 12, p. 143; Dec. 26, p. 125
 Integration, graphical, Oct. 17, p. 157
 Integrator, mechanical, Jan. 10, p. 156
 Intermittent-motion mechanisms, Sept. 5, p. 198
 Invention, right of, May 2, p. 81
 Inventions, exploiting, May 16, p. 153
 patentable, Sept. 19, p. 120
 published, patentable, Apr. 4, p. 95
 Inventors, outside, Aug. 22, p. 90
 Inverters, power, June 13, p. 224
 Iron, gray, impact resistance of, Dec. 26, p. 85
 Joint, movable, Sept. 19, p. 125

L

- Latches, Aug. 8, p. 148; Dec. 12, p. 238
 Lathe, dial-spindle, Feb. 21, p. 118
 Lenses, plastic, May 2, p. 128
 Lighting, Apr. 4, p. 162; May 2, p. 136; May 16, p. 221;
 May 30, p. 114; July 11, p. 192, 220; July 25, p. 10,
 163; Aug. 8, p. 15; Sept. 19, p. 272; Oct. 17, p. 28,
 30, 198; Oct. 31, p. 102; Nov. 14, p. 247, 257
 Limit stop, May 2, p. 156; Nov. 14, p. 201
 Limit stops, gear-train, May 30, p. 84
 Limits and fits, Oct. 3, p. 201
 Linkages, four-bar, Nov. 28, p. 136
 giant, May 16, p. 118
 Liquid-level indicator, Feb. 7, p. 82
 Locomotive, gas-turbine, Feb. 21, p. 28
 Lubricants, May 2, p. 114; June 27, p. 31; Nov. 14, p.
 230; Nov. 28, p. 142
 dry-film, Sept. 19, p. 184
 Lubrication equipment, Jan. 24, p. 82; Feb. 21, p. 172;
 Apr. 18, p. 8, 194, 238, 258; May 16, p. 242; Aug. 22,
 p. 192

M

- Machines (see specific type)
 Machines, voice-actuated, Oct. 17, p. 168
 Machining, ultrasonic, Sept. 5, p. 121
 Magnesium and alloys, Apr. 4, p. 112
 Magnetic amplifiers, May 30, p. 96
 Magnetic cores, Apr. 4, p. 167
 Magnets, Feb. 21, p. 187; Apr. 18, p. 122; July 11, p. 210;
 Aug. 8, p. 83; Dec. 12, p. 6
 Man-machine systems, May 16, p. 110
 Management, engineering, Jan. 10, p. 94, 101; Apr. 4, p.
 5; Apr. 18, p. 164; May 2, p. 109; May 30, p. 87;
 June 13, p. 110, 170; June 27, p. 30, 101; July 25, p.
 72, 80, 103; Aug. 8, p. 122; Aug. 22, p. 90; Sept. 5,
 p. 107; Oct. 3, p. 22, 98, 132; Oct. 17, p. 15; Oct. 31,
 p. 62; Nov. 28, p. 102; Dec. 12, p. 25, 122; Dec. 26,
 p. 30, 70
 Mask, protective, July 25, p. 6
 Materials handling equipment, Jan. 10, p. 204; Jan. 24,
 p. 22; Feb. 7, p. 190; May 16, p. 8; Aug. 8, p. 96
 Medical equipment, Feb. 7, p. 10
 Metal crimping, Nov. 28, p. 117
 Metals (see also specific type)
 Metals, Jan. 10, p. 156, 162; Mar. 7, p. 174; Mar. 21,
 p. 193; Apr. 4, p. 146; Apr. 18, p. 31; Aug. 8, p. 22;
 Sept. 19, p. 204; Oct. 31, p. 33; Dec. 12, p. 14, 202
 vacuum-melted, July 11, p. 34
 Metalworking equipment, Jan. 10, p. 206; Jan. 24, p. 176;
 Feb. 7, p. 192; Aug. 8, p. 94
 Meter, flow, May 30, p. 68
 Meter-relays, Jan. 10, p. 133; May 2, p. 128
 Microscope, television-type, May 30, p. 8
 Military equipment, Mar. 7, p. 22, 29; Apr. 4, p. 26
 Milling, chemical, June 13, p. 153
 Missiles, June 27, p. 25
 Mixers, water, May 30, p. 110
 Molybdenum and alloys, Feb. 21, p. 137
 Moments of inertia, May 16, p. 147
 Motion converter, magnetic, June 27, p. 155
 Motion discriminator, June 27, p. 156
 Motion-resisting forces, July 25, p. 94
 Motor bases, June 13, p. 208; Sept. 19, p. 266
 Motor boats, Feb. 21, p. 10
 Motors, electric:
 brakemotors, Jan. 24, p. 143; Dec. 26, p. 130
 fractional and integral hp, Jan. 10, p. 99; Jan. 24, p.

- 158; Feb. 7, p. 134, 142; Feb. 21, p. 184; Mar. 7, p.
 158; Mar. 21, p. 216; Apr. 4, p. 148, 154; May 16, p.
 226, 232, 287; May 30, p. 110, 114; June 13, p. 214;
 June 27, p. 138; July 11, p. 196, 212, 223; July 25, p.
 163; Aug. 8, p. 140, 157; Aug. 22, p. 164; Sept. 5, p.
 172; Oct. 3, p. 160, 172; Oct. 17, p. 195, 208, 216; Oct.
 31, p. 116; Nov. 28, p. 109, 174, 176; Dec. 12, p. 198,
 211, 253; Dec. 26, p. 81
 gearmotors, Jan. 24, p. 154, 157; Mar. 7, p. 130; Mar.
 21, p. 121, 198; Apr. 4, p. 167, 178; Apr. 18, p. 218;
 May 2, p. 136; May 16, p. 204, 242, 287; June 13, p.
 200, 233; July 11, p. 122, 186; Aug. 8, p. 166, 190;
 Aug. 22, p. 217; Sept. 5, p. 152; Oct. 17, p. 204;
 Nov. 14, p. 244; Nov. 28, p. 184
 high-frequency, Sept. 5, p. 126
 incremental, Sept. 5, p. 195
 subfractional hp, Jan. 10, p. 172, 185; Mar. 21, p. 198;
 Apr. 4, p. 172, 192; May 16, p. 120; Sept. 5, p. 142;
 Sept. 19, p. 209; Nov. 14, p. 224; Nov. 28, p. 160; Dec.
 26, p. 127
 Motors, heat, Sept. 5, p. 195
 hydraulic, Mar. 21, p. 159
 pneumatic, Sept. 19, p. 222
 torque, Mar. 21, p. 234, 280; June 13, p. 226; Sept. 19,
 p. 204
 Mounting pads, elastic, Sept. 19, p. 171
 Mountings, instrument, Mar. 21, p. 216
 vibration and shock, Mar. 7, p. 154; Mar. 21, p. 196;
 Apr. 18, p. 119; June 13, p. 196; July 25, p. 164;
 Aug. 8, p. 99; Dec. 12, p. 300; Dec. 26, p. 116, 129
 Mower, rotary, Sept. 19, p. 150

N

- Nameplates, Feb. 21, p. 160; Mar. 21, p. 241; Apr. 4, p.
 148; Oct. 3, p. 170; Dec. 12, p. 127
 Navigation system, Apr. 18, p. 22
 Nickel and alloys, Aug. 22, p. 139; Oct. 31, p. 124
 Noise reduction, Mar. 7, p. 118
 Nonlinear springs, May 16, p. 144
 Nozzles, spray, Oct. 17, p. 233
 Nuclear power, Apr. 18, p. 24

O

- Office equipment, Nov. 28, p. 120
 Optical system, May 30, p. 89
 Oscillographic recorders, Mar. 7, p. 186; Apr. 4, p. 197;
 Apr. 18, p. 242; Aug. 8, p. 194; Sept. 5, p. 184; Sept.
 19, p. 276
 Oscilloscope, accessible, Jan. 24, p. 108

P

- Packaging equipment, Feb. 7, p. 196
 Packings, Apr. 4, p. 146; June 13, p. 208, 228; June 27,
 p. 128; Sept. 19, p. 210; Oct. 31, p. 69; Nov. 28, p.
 184; Dec. 26, p. 128
 compression, Oct. 31, p. 87
 leather, Oct. 31, p. 97
 molded synthetic, Oct. 31, p. 91
 Pads, toggle, Dec. 12, p. 240
 Paint gun, Jan. 10, p. 126
 Part-numbering system, Apr. 4, p. 88
 Patent pools, Nov. 14, p. 116
 Performance standards, May 2, p. 74
 Permanent employment contracts, Jan. 10, p. 101
 Permanent magnet assemblies, Apr. 18, p. 122
 Photographic equipment, Apr. 18, p. 14

Pillow blocks, Feb. 7, p. 158
 Pipe, Sept. 19, p. 242
 Pipe bends, Jan. 24, p. 113
 Piston, ball, Aug. 22, p. 98
 Pistons, May 2, p. 80
 Pitch-control mechanisms, May 16, p. 136
 Plant equipment, Jan. 24, p. 178
 Plastic, magnetic, Mar. 21, p. 190
 Plastic deformation, Nov. 14, p. 153
 Plastic panels, reinforced, Jan. 24, p. 114
 Plastic parts, thin-wall, July 11, p. 146
 Plastics, Jan. 10, p. 14, 164; Jan. 24, p. 114, 144; Feb. 21, p. 154; Mar. 21, p. 221, 234, 241; Apr. 18, p. 196; May 2, p. 14; May 16, p. 206; May 30, p. 116; June 27, p. 128; Aug. 22, p. 179, 194; Sept. 5, p. 86, 150; Sept. 19, p. 162, 255; Oct. 3, p. 124, 184; Oct. 17, p. 124, 201; Nov. 14, p. 242; Nov. 28, p. 118, 168; Dec. 12, p. 175, 254; Dec. 26, p. 25, 116
 adapting design practices to, June 27, p. 112
 cellular, welding, Nov. 28, p. 138
 modified styrene, Nov. 14, p. 163
 Plastics molding, Apr. 18, p. 144; June 27, p. 143; Aug. 22, p. 169
 Plugs, Apr. 4, p. 146; June 13, p. 221
 Pneumatic equipment (see specific type)
 Positioner, torque-amplifying, June 27, p. 155
 Positioning, precision, friction drive for, May 30, p. 73
 Potentiometers, Jan. 24, p. 143; Feb. 7, p. 155; Mar. 7, p. 163, 182; Mar. 21, p. 248; Apr. 18, p. 226, 236; May 2, p. 138; June 13, p. 216, 246; Aug. 8, p. 157, 174; Aug. 22, p. 168, 206; Sept. 5, p. 164; Oct. 3, p. 194; Oct. 17, p. 190, 210; Nov. 14, p. 226, 236, 260; Nov. 28, p. 194; Dec. 12, p. 211
 Powder metallurgy, Jan. 24, p. 8, 160; Feb. 7, p. 8; Mar. 21, p. 227; June 27, p. 110
 Power absorber, May 16, p. 12
 Power packs, nuclear, Mar. 7, p. 128
 Power pickup, Mar. 21, p. 193
 Power supplies, Dec. 26, p. 128
 Power take-off, Oct. 31, p. 127
 Press, hydraulic, for compression testing, June 27, p. 91
 Pressure snubbers, Nov. 28, p. 162
 Pressure vessels, Apr. 4, p. 121
 Printed circuits, Apr. 4, p. 112
 flexible, July 11, p. 124
 Processing equipment, Jan. 10, p. 210; Jan. 24, p. 180; Feb. 7, p. 196; June 13, p. 10
 Projector, motion-picture, Mar. 7, p. 94; May 16, p. 135
 Projectors, Aug. 8, p. 98
 Propellers, airplane, Feb. 7, p. 6
 Pulleys (see also Sheaves), Jan. 24, p. 138; July 11, p. 236; Oct. 3, p. 189; Nov. 14, p. 254; Dec. 12, p. 204
 Pumps, Jan. 10, p. 98, 190; Jan. 24, p. 130; Mar. 7, p. 134, 171, 202; Mar. 21, p. 232, 247; Apr. 4, p. 150, 164; Apr. 18, p. 191, 258; May 30, p. 116; June 13, p. 216, 235, 249; June 27, p. 124, 147; July 11, p. 195; July 25, p. 143; Aug. 8, p. 146, 186; Sept. 5, p. 169; Sept. 19, p. 228, 265; Oct. 3, p. 184, 197; Nov. 14, p. 119, 252; Dec. 12, p. 208, 259; Dec. 26, p. 130
 high-vacuum, Sept. 19, p. 6
 hydraulic, Jan. 24, p. 140; Feb. 7, p. 152; Mar. 7, p. 128, 150; May 2, p. 126; July 11, p. 210; Aug. 22, p. 98; Sept. 19, p. 268; Oct. 3, p. 212; Oct. 17, p. 195, 222; Nov. 14, p. 213; Nov. 28, p. 209
 positive-displacement, rotary, Sept. 19, p. 174

R

Radar, long-range, Dec. 12, p. 5
 Radar research, Sept. 5, p. 6

Radio, Dec. 12, p. 15, 40
 FM, miniature, Apr. 4, p. 6
 portable, May 16, p. 135
 small, Apr. 18, p. 22
 Radio transmitter, powerful, May 30, p. 5
 Ratchets, Sept. 19, p. 296
 Reactor, nuclear, package, May 30, p. 22
 Reactors, Oct. 17, p. 224
 Recorders, Mar. 7, p. 184; Apr. 4, p. 112; May 2, p. 148, 152; May 16, p. 297, 304; June 27, p. 140; July 11, p. 226; Nov. 14, p. 264, 271; Dec. 12, p. 268, 276
 speed deviation, Dec. 12, p. 236
 tape, June 13, p. 24; Aug. 8, p. 198; Sept. 19, p. 270
 Rectifiers, Apr. 18, p. 222; May 16, p. 151; June 13, p. 206; Aug. 22, p. 191; Sept. 19, p. 230, 275; Nov. 28, p. 72; Dec. 12, p. 238
 Reducers, speed, Jan. 10, p. 156; Mar. 7, p. 132, 158; Mar. 21, p. 121; Apr. 18, p. 237; May 16, p. 224, 248; June 13, p. 204, 244; June 27, p. 130; July 25, p. 160; Aug. 8, p. 85, 176; Aug. 22, p. 172; Sept. 5, p. 174; Sept. 19, p. 261, 263; Oct. 17, p. 184; Dec. 12, p. 194
 Refractometer, May 30, p. 89
 Refrigerator, forced-air-cooled, Nov. 14, p. 144
 Regulators, flow, Feb. 7, p. 163; May 2, p. 80, 158; May 16, p. 208; June 13, p. 282; July 11, p. 205; Sept. 19, p. 269; Oct. 3, p. 124; Nov. 14, p. 230
 liquid-level, June 13, p. 120
 pressure, Jan. 10, p. 168; Feb. 7, p. 145, 206; Mar. 7, p. 151; Apr. 18, p. 256; May 16, p. 228, 238; May 30, p. 114; Aug. 22, p. 196; Sept. 5, p. 150
 vacuum, Apr. 4, p. 160
 voltage, July 25, p. 134
 Relays, Jan. 10, p. 189; Jan. 24, p. 130, 150, 157; Feb. 7, p. 150; Feb. 21, p. 187, 200; Mar. 7, p. 132, 148; Mar. 21, p. 221; Apr. 4, p. 156; Apr. 18, p. 121, 191; May 2, p. 126; May 16, p. 252, 280, 326; May 30, p. 67, 118; June 13, p. 192; June 27, p. 143; July 11, p. 200; July 25, p. 128, 142, 148; Aug. 8, p. 148, 152, 190; Aug. 22, p. 144, 160, 174, 200; Sept. 19, p. 220, 263; Oct. 3, p. 140, 172, 189; Oct. 17, p. 186, 216; Nov. 14, p. 192, 196, 252; Dec. 12, p. 214, 267; Dec. 26, p. 127
 Reliability, Jan. 10, p. 140; Dec. 12, p. 182
 Research and development, Feb. 7, p. 12; Mar. 7, p. 15; Mar. 21, p. 257; Apr. 4, p. 28; Apr. 18, p. 114; May 2, p. 12, 25; June 13, p. 6; July 11, p. 141; Aug. 8, p. 76; Sept. 5, p. 78; Sept. 19, p. 157; Oct. 3, p. 106, 139, 202; Oct. 17, p. 110; Oct. 31, p. 5; Nov. 14, p. 28; Nov. 28, p. 6; Dec. 26, p. 22, 31, 134
 Resistors, Mar. 21, p. 253; Apr. 18, p. 206, 228; May 16, p. 248; June 27, p. 124; July 25, p. 158; Aug. 8, p. 143; Sept. 19, p. 236; Oct. 17, p. 204; Nov. 14, p. 254
 Resonant frequencies, Nov. 14, p. 149
 Reynold's number, Dec. 12, p. 173
 Rings, deflection of, Nov. 14, p. 167
 Rocket fuel, May 2, p. 22; May 30, p. 22
 Rockets, Aug. 22, p. 10
 Roll forming, Dec. 26, p. 102
 Rotary parts, high-speed, Oct. 17, p. 148
 Rubber, Jan. 10, p. 6, 24; Mar. 21, p. 250; Apr. 18, p. 25; July 11, p. 206; July 25, p. 142; Oct. 3, p. 10; Oct. 17, p. 207; Nov. 28, p. 100, 159, 191
 Rubber molding, Nov. 14, p. 218
 Running gear, Oct. 31, p. 124

S

Safety in design, Nov. 14, p. 176
 Salary, engineers', Feb. 21, p. 14

- Salary survey, Aug. 22, p. 14; Sept. 5, p. 30
- Sapphires, synthetic, June 27, p. 133
- Satellite, artificial, Oct. 31, p. 22
- Satellite monitor, May 2, p. 5
- Saw, reciprocating electric, Sept. 19, p. 147
- Scanners, photoelectric, Dec. 12, p. 214
- Screws, May 16, p. 115
power, Oct. 3, p. 103; Dec. 26, p. 138
- Seals, Jan. 10, p. 100, 159; Jan. 24, p. 157; Feb. 7, p. 91;
Mar. 21, p. 120; Apr. 18, p. 188, 231; May 2, p. 158;
May 16, p. 250, 254, 278, 326; May 30, p. 112, 116;
June 27, p. 126, 140; July 25, p. 79, 128, 136; July 11,
p. 209; Oct. 3, p. 210, 216; Nov. 14, p. 120, 192; Dec.
12, p. 216, 250; Dec. 26, p. 128, 138
bearing, Apr. 4, p. 127
felt, Oct. 31, p. 72
floating-ring, Oct. 31, p. 84; Nov. 28, p. 209
mechanical, Jan. 10, p. 214; Feb. 7, p. 202; Feb. 21, p.
232, 234; Apr. 4, p. 184; Apr. 18, p. 254, 256; May
16, p. 154; May 30, p. 134; Aug. 8, p. 82, 138, 204;
Aug. 22, p. 179, 185, 200, 219, 221; Sept. 5, p. 85, 144;
Sept. 19, p. 186, 289; Oct. 3, p. 214; Oct. 31, p. 77, 136
pressurized, metallic, May 16, p. 154
radial, Sept. 5, p. 198; Oct. 31, p. 75; Nov. 28, p. 210
- Searchlight, airborne, May 16, p. 138
- Separator, liquid-gas, Jan. 24, p. 146
- Servo-system performance, May 30, p. 76
- Servos, Feb. 7, p. 170; Feb. 21, p. 109, 157; Mar. 7, p. 100,
171, 177; Mar. 21, p. 160, 232, 248; Apr. 18, p. 170,
224; June 13, p. 142; July 11, p. 132; July 25, p. 89;
Aug. 8, p. 90, 118, 154; Oct. 17, p. 232; Oct. 31, p.
122, 130; Nov. 28, p. 140; Dec. 12, p. 270
- Shaft drive, sealed, May 2, p. 156
- Shafts, Sept. 19, p. 232
expanding, Oct. 17, p. 119
flexible, Sept. 19, p. 232; Oct. 17, p. 235
- Ship, trailer-carrying, Feb. 21, p. 6
- Shock protection, Nov. 14, p. 180
- Shrink-fitting, electrical, July 11, p. 120
- Silencer, Nov. 14, p. 210
- Silicones, Mar. 21, p. 250; Apr. 4, p. 192; Apr. 18, p. 25;
July 11, p. 206; July 25, p. 142
- Slides, Oct. 17, p. 207
- Slip-ring assemblies, May 16, p. 274; Dec. 12, p. 276
- Solar energy, July 11, p. 24
- Solar furnace, July 25, p. 14
- Solder, June 13, p. 14
- Solenoids, Jan. 24, p. 140; Mar. 7, p. 79; Mar. 21, p. 222;
Apr. 4, p. 144; June 13, p. 202; Oct. 31, p. 124; Nov.
14, p. 210; Dec. 12, p. 250; Dec. 26, p. 77
rotary, Feb. 21, p. 114
- Solions, Aug. 22, p. 102; Sept. 19, p. 214
- Speaker, large, for transistor radio, Apr. 18, p. 152
- Specifications, government, Feb. 7, p. 76
- Spindles, Jan. 24, p. 162; Aug. 8, p. 83
- Spring assemblies, combination, Sept. 19, p. 159
- Spring washers, Jan. 10, p. 99
- Springs, Mar. 7, p. 106; Mar. 21, p. 172; Apr. 4, p. 176;
Apr. 18, p. 119, 252; May 2, p. 102; May 16, p. 144;
May 30, p. 114; July 25, p. 105; Aug. 8, p. 188; Aug.
22, p. 118; Sept. 19, p. 206; Nov. 14, p. 287; Nov. 28,
p. 100; Dec. 26, p. 137
air, Feb. 7, p. 26
compression, Apr. 4, p. 98
- Sprockets, Feb. 7, p. 132
- Stability, longitudinal, Sept. 5, p. 109
- Stability of vehicles, July 11, p. 147
- Standards, nuclear energy, Sept. 19, p. 5
performance, May 2, p. 74
- Starters, engine, Feb. 7, p. 170
motor, Aug. 22, p. 100
- Steel, Feb. 21, p. 164; May 16, p. 204; Dec. 12, p. 180, 244
sintered, strength of, June 27, p. 110
stainless, Apr. 4, p. 138; June 13, p. 198; Aug. 8, p.
123, 174; Sept. 19, p. 36
- Steering forces and stability, June 27, p. 92
- Stress, state of, June 13, p. 157
- Stress analysis, Dec. 26, p. 113
experimental, Nov. 14, p. 174
- Stress concentrations, Aug. 22, p. 142
- Surge chamber, Nov. 14, p. 289
- Suspension system, air-leveling, Nov. 14, p. 142
- Switch, commutating, May 30, p. 68
- Switch-operating mechanism, Oct. 3, p. 210
- Switches, Jan. 10, p. 162, 166, 168, 170, 182; Jan. 24, p.
130; Feb. 7, p. 132, 152, 166; Feb. 21, p. 192; Mar.
7, p. 168, 180; Mar. 21, p. 221, 238; Apr. 4, p. 144,
181; Apr. 18, p. 121, 213, 237; May 2, p. 126, 128;
May 16, p. 262, 272, 284; May 30, p. 118, 122; June
13, p. 184, 186, 202, 210, 253; June 27, p. 126, 138;
July 11, p. 186, 216, 221, 224, 229, 238; Aug. 8, p.
138, 170, 206; Aug. 22, p. 106, 170, 181, 194, 221;
Sept. 5, p. 144, 172; Sept. 19, p. 204, 224, 245, 254,
257; Oct. 3, p. 158, 166, 178, 187; Oct. 17, p. 211, 222;
Nov. 14, p. 192, 194, 201, 206, 257; Nov. 28, p. 159,
176, 182, 211; Dec. 12, p. 224, 246, 256; Dec. 26, p.
125, 137
- Swivel, June 13, p. 282
- Swivel joints, Feb. 7, p. 204; June 13, p. 278; July 25,
p. 138, 176; Sept. 5, p. 159; Oct. 17, p. 188
- Synchro system, Nov. 28, p. 140
- Synchronizing motions with hydraulic cylinders, May 2,
p. 94
- Synchs, Feb. 21, p. 195; Aug. 22, p. 196
- Systems, hydraulic, Mar. 7, p. 110; May 16, p. 131; Sept.
5, p. 101; Dec. 26, p. 88
man-machine, May 16, p. 110

T

- Tachometers, Jan. 10, p. 192; Feb. 21, p. 188; July 25,
p. 162; Nov. 28, p. 166
- Tape, Sept. 5, p. 170
- Taping mechanism, July 11, p. 142
- Television camera tube, July 11, p. 33
- Temperature detector, Dec. 12, p. 242
- Tender, drilling-platform, Dec. 12, p. 6
- Terminal blocks, June 27, p. 139
- Terminals, Jan. 10, p. 159; Feb. 7, p. 81, 134; Mar. 21,
p. 188, 202; July 11, 208; Sept. 19, p. 206, 226
sealed, Apr. 4, p. 132
- Testing, Jan. 24, p. 182; Mar. 21, p. 254; Apr. 4, p. 194;
Apr. 18, p. 199; May 16, p. 285, 297, 300; June 27,
p. 149, 150; Aug. 8, p. 12; Aug. 22, p. 206; Sept. 5,
p. 182; Oct. 3, p. 205; Oct. 17, p. 242; Nov. 28, p. 198;
Dec. 26, p. 91
- Thermal design in electronic equipment, May 2, p. 84
- Thermal expansion, Mar. 7, p. 111
- Thermistors, Dec. 12, p. 178
- Thermocouples, Oct. 17, p. 214
- Thermometers, Mar. 7, p. 186; Aug. 22, p. 208; Sept. 5,
p. 170; Nov. 14, p. 233
- Thermostats, Jan. 10, p. 187; Jan. 24, p. 144, 162; Feb. 7,
p. 140, 171; Mar. 21, p. 248; May 16, p. 230, 236;
June 13, p. 246; July 11, p. 221; Aug. 22, p. 221;
Oct. 17, p. 220; Nov. 28, p. 116

Thread-locking agent, liquid, Sept. 19, p. 129

Thread rolling, Dec. 26, p. 102

Timers, Jan. 24, p. 14, 134, 165; Feb. 21, p. 200; Mar. 7, p. 148, 156, 168; Mar. 21, p. 221; Apr. 18, p. 241, 245; May 16, p. 276; May 30, p. 110, 114; July 11, p. 184; July 25, p. 146, 155; Aug. 22, p. 185, 219; Sept. 5, p. 154; Sept. 19, p. 255; Oct. 3, p. 192, 199; Oct. 17, p. 118, 188, 205; Nov. 14, p. 196, 220; Nov. 28, p. 188; Dec. 12, p. 219, 246, 262

Tips and techniques, Jan. 10, p. 97, 103, 125, 131; Jan. 24, p. 87, 94, 99, 112; Feb. 21, p. 113, 117, 123, 134; Mar. 7, p. 77, 82, 109; Apr. 4, p. 92, 109, 120; Apr. 18, p. 143, 160; May 2, p. 108, 110; May 16, p. 130, 143, 150; May 30, p. 72, 86, 88; June 13, p. 135, 147, 152, 156, 276; June 27, p. 79, 100, 108; July 11, p. 119, 131, 136, 140, 151, 158, 162; July 25, p. 77, 82, 93, 104; Aug. 8, p. 100, 107, 111; Aug. 22, p. 114; Sept. 5, p. 106, 108, 115; Sept. 19, p. 140, 146, 156, 161, 170, 173; Oct. 3, p. 115, 131; Oct. 17, p. 116, 124, 135, 156; Oct. 31, p. 66, 110; Nov. 14, p. 135, 141, 152, 158, 169, 172; Nov. 28, p. 97, 105, 115, 133, 134; Dec. 12, p. 132, 142, 153, 160, 165, 172; Dec. 26, p. 74, 84, 87, 101

Titanium and alloys, Feb. 7, p. 25; Mar. 21, p. 167, 227; June 27, p. 5; Aug. 8, p. 86

Toaster and oven, automatic, July 11, p. 144

Tolerancing, statistical, June 13, p. 121

Torque amplifier, Nov. 14, p. 204

Torque converters, Feb. 7, p. 116; Mar. 21, p. 119; Apr. 4, p. 144, 158; July 11, p. 208

Torque-limit control, Feb. 7, p. 82

Toys, Oct. 17, p. 10; Oct. 31, p. 6

Train, rubber-tired, Dec. 12, p. 144

Transducers, May 2, p. 132, 141; June 13, p. 119, 184, 186; July 25, p. 178; Sept. 19, p. 217, 272; Oct. 3, p. 202; Oct. 17, p. 228; Dec. 12, p. 36, 259, 272; Dec. 26, p. 88

Transformers, June 13, p. 124, 235; June 27, p. 130; July 11, p. 184, 192; July 25, p. 145; Aug. 22, p. 189; Sept. 5, p. 186; Sept. 19, p. 210, 242; Oct. 17, p. 224; Nov. 14, p. 198

Transistors, Apr. 4, p. 150; May 16, p. 6, 260; May 30, p. 110; Oct. 17, p. 138, 184, 221

Transmissions, adjustable-speed, Jan. 24, p. 100, 150; Apr. 4, p. 178, 190; May 2, p. 138; May 16, p. 116, 117, 282, 292, 320, 322; July 11, p. 236; July 25, p. 83; Sept. 19, p. 238; Oct. 31, p. 136; Nov. 14, p. 257; Dec. 12, p. 213

Transmitter, speed, May 30, p. 112

Trim, adhesive, July 25, p. 146

Triode, miniature, June 13, p. 221

Triodes, industrial, Dec. 12, p. 264

Truck, tilt-cab, Feb. 21, p. 5

Truck body, elevator, July 25, p. 8

Trucks, July 25, p. 70

Tube, radar, Sept. 19, p. 246

Tubing, Feb. 7, p. 155; Feb. 21, p. 102, 195; Apr. 4, p. 174; July 11, p. 14, 216; July 25, p. 145, 163; Aug. 8, p. 95, 164; Aug. 22, p. 162; Oct. 3, p. 164, 190; Oct. 17, p. 226; Nov. 28, p. 187; Dec. 12, p. 206, 228

Tungsten, Mar. 21, p. 14

Turbines, gas, July 25, p. 28

Turnbuckles, July 25, p. 128

U

Ultrasonic machining, Nov. 14, p. 162

Universal joints, May 16, p. 324; June 13, p. 280; Dec. 12, p. 302; Dec. 26, p. 124

Unloaders, parts, Sept. 5, p. 99

V

Valves, Jan. 24, p. 152; Feb. 7, p. 166; Feb. 21, p. 188, 198, 232; Mar. 21, p. 186, 196, 207, 278; Apr. 4, p. 158; Apr. 18, p. 170, 188, 196, 239; May 2, p. 134; May 16, p. 208, 216, 220, 246, 258, 278, 284, 290; May 30, p. 112, 118; June 13, p. 119, 206, 210, 230; June 27, p. 124; July 11, p. 123, 184, 200, 218; July 25, p. 128, 148, 155; Aug. 8, p. 99, 160, 170, 184; Sept. 5, p. 85, 142, 162, 174; Sept. 19, p. 220, 261; Oct. 3, p. 158, 166, 174, 212; Oct. 17, p. 118, 220, 257; Oct. 30, p. 126, 128, 138; Nov. 14, p. 210, 224; Dec. 12, p. 194, 216, 222, 298; Dec. 26, p. 129

controller, Apr. 18, p. 214

hydraulic, Feb. 7, p. 134; Feb. 21, p. 167; Mar. 21, p. 201; Apr. 4, p. 152, 176; May 2, p. 142; June 13, p. 240; June 27, p. 136; Sept. 19, p. 128; Oct. 3, p. 190; Oct. 17, p. 203, 238; Nov. 14, p. 238, 258

metering, Jan. 10, p. 127

pneumatic, Jan. 24, p. 132, 160; Feb. 7, p. 174; Mar. 7, p. 160; Apr. 4, p. 148, 210; Apr. 18, p. 218; May 2, p. 130; May 16, p. 230, 264; June 13, p. 184, 196; Sept. 19, p. 240; Dec. 12, p. 233; Dec. 26, p. 124

Vehicles, mechanics of, May 30, p. 60; June 13, p. 130; June 27, p. 92; July 11, p. 147; July 25, p. 98; Aug. 8, p. 101; Aug. 22, p. 128; Sept. 5, p. 109; Sept. 19, p. 152; Oct. 17, p. 143; Nov. 14, p. 136; Nov. 28, p. 126; Dec. 12, p. 148; Dec. 26, p. 92

Vibration absorber, torsional, Mar. 21, p. 280

Vibration damper, torsional, June 13, p. 280

Vibration frequency, Feb. 7, p. 109

Vibration mockups, Sept. 19, p. 157

Vibrators, Aug. 22, p. 118

Viscosity, kinematic, Dec. 12, p. 173

W, Z

Washers, Mar. 7, p. 130; Apr. 4, p. 176, 178; Oct. 17, p. 208

Belleville spring, Oct. 31, p. 107

lock, Sept. 19, p. 222; Dec. 12, p. 198

tension-indicating, Sept. 19, p. 126

Waveguide components, Feb. 21, p. 178

Weapons, June 13, p. 32

Welding, Mar. 21, p. 24; May 2, p. 26; May 16, p. 30; Dec. 12, p. 180

Welding cellular plastics, Nov. 28, p. 138

Weldments, Aug. 8, p. 22; Sept. 19, p. 135

Wheel rim, adjustable, June 27, p. 81

Wheels, Jan. 10, p. 180; Mar. 21, p. 186, 197, 198; Nov. 14, p. 218; Dec. 12, p. 127

motion of, May 30, p. 60

Wire and wire products, Jan. 10, p. 25; Mar. 7, p. 134; Mar. 21, p. 186, 236; Apr. 4, p. 186; Aug. 22, p. 166; Nov. 14, p. 250; Nov. 28, p. 162

Wiring, electrical, Oct. 3, p. 121

Wiring channels, Apr. 4, p. 152

Wrist watch, electric, Jan. 24, p. 14

Writer, technical, Nov. 28, p. 94

Writing, engineering, Mar. 7, p. 80

Zinc and alloys, Sept. 5, p. 76